

*courtesy of Don*

# International Phonetic Association

President: Peter Ladefoged

Secretary: Peter Roach

9/7/89

Dear Colleague

Thank you very much for your participation in the Kiel Convention. I have never been at a meeting of any kind in which people worked so hard, and so much was achieved. I am sure that all of us who were there have come away with the feeling of having been present at An Event, with capital letters.

Attached are:

1. A copy of a letter that is being sent to IPA Council members
2. A draft of a new IPA chart
3. A consolidated report of the work of the groups concerned with
  - (a) the Principles on which the IPA should be based
  - (b) consonants
  - (c) vowels
  - (d) suprasegmentals,
  - (e) illustrations of the IPA.

This report will be submitted to the Editor of the *Journal* for his consideration.

4. The report on past successes and failures of the IPA
5. The report of the computer group
6. The report of the group working on extensions of the IPA.

I hope that these three later reports will also be submitted for publication.

In producing the consolidated report I may have overlooked some points, or got some of it wrong, so please scrutinise it all very carefully, and let me know your opinions. In making the chart I have tried to follow exactly the wishes of the Convention as expressed in the votes in plenary sessions, but there are one or two matters in which this has been difficult to do. For example, we voted both to make the symbols much larger, and to put voiceless symbols *above* voiced ones. This is hard to achieve in practice. The width of each column has to be at least as wide as its name, which leaves plenty of space even for two large symbols side by side in each cell. If the voiceless symbols are put above the voiced symbols the consonant part of the chart takes up much more vertical space, without any decrease in the horizontal space required. As there seemed to be no compelling reasons to put the voiceless symbols above the voiced ones, the traditional practice of having them side by side has been continued.

With best wishes, and again many thanks to all of you.

Yours,

*Peter Ladefoged*  
Peter Ladefoged

# International Phonetic Association

President: Peter Ladefoged

Secretary: Peter Roach

UCLA  
Los Angeles  
CA 90024-1543  
USA

9/7/89

Dear Council Member:

Attached is a letter to all participants at our very successful Kiel convention, together with a report on the meeting, describing the decisions that were made by those attending. This report will be submitted to the Editor for his consideration for publication in *The Journal*. Also attached is a draft of a proposed single sheet presenting the International Phonetic Alphabet, which, of course, needs to be approved by the Council before it can be considered to be an official publication of the Association. This draft incorporates all the decisions of the 1989 Kiel Convention. Please consider it carefully and, I hope, give it your approval. Any minor, editorial suggestions will be gratefully received; but I feel that anything other than a strong vote of approval for the report essentially as it stands will be a severe blow to those members who worked so long and hard before and at the convention. There were some minor decisions I personally think were wrong; but they were made by a democratic decision of a large proportion of our membership, and I will therefore vote to accept them. I urge you to do the same.

Best wishes,

Yours,

Peter Ladefoged

Copy for information of participants

25 SEP 1989

INTERNATIONAL LINGUISTICS  
COORDINATOR  
Summer Institute of Linguistics  
7500 W. Camp Wisdom Road  
Dallas, Texas 75236

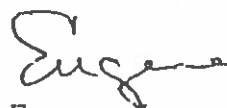
To: SIL schools and departments  
From: Eugene Loos  
Re: IPA

At the recent meeting of the International Phonetics Association to revise the International Phonetics Alphabet, they introduced some radical changes in philosophy: they now embrace a complete series of diacritics, and they no longer make the claim that the IPA is an attempt at making a phonemic representation.

The acceptance of diacritics means that there are now fewer unitary symbols. Composite symbols made up of the basic character for a point and manner of articulation combined with one or more diacritics allows for variations. You will notice, for example, that only one voiceless stop character is used to represent a non-continuant vl. obstruent at the dental, post-dental, alveolar and post-alveolar (alveo-palatal) positions. A diacritic is to be added when one wishes to make distinctions within that range.

About 130 people participated in the conference, from a wide variety of disciplines: acoustic phonetics, speech synthesis, aphasia, comparative linguistics, descriptive linguistics, dictionary and encyclopedia compilation, language teachers, publishing houses, articulatory phoneticians, etc. Almost all of them had university connections in some way, and since this time the meetings were all in English and there was strong U.S. and British university representation, we can expect to find increasing use of the IPA in its revised form in American university circles.

There is one point in which the attached material is incomplete. Every symbol is to have associated with it an IPA catalog number which will be made public in an upcoming issue of the IPA journal. The purpose of the catalog reference number is to enable computer users to share files. Each user should, along with his files, provide a table of correspondences so that no matter what software and hardware one is using, the particular ASCII character or multiple characters that one uses to represent a particular IPA character can be unambiguously identified by anyone using the file. Future releases of the SIL fontpot should therefore have the IPA reference number for each character included in the character's information.



Eugene Loos  
September 19, 1989

EEL:jd

a	Voiceless	n̥ d̚	, More rounded	ɔ	w Labialised	tʷdʷ	~ Nasalised	ẽ
v	Voiced	s̺ t̺	, Less rounded	ɔ	j Palatalised	tʲdʲ	ɱ Nasal release	d̪n̩
h	Aspirated	tʰ dʰ	+ Advanced	ɨ	y Velarised	tʲv dʲv	l Lateral release	dʲl̩
..	Breathily-voiced	b̤ ä̤	- Retracted	i̯	f Pharyngealised	tʰ f dʰ f	ʔ No audible release	dʰʔ
~	Greakly voiced	b̞ ä̞	.. Centralised	e̝	~ Velarised or pharyngealised	f		
~	Linguo-labial	t̟ d̟	" Mild centralised	e̘	Raised	e̘ j̘		
~	Dental	t̪ d̪	+ +ATR	e̙	(j̘ = voiced alveolar fricative)			
~	Apical	t̺ d̺	- -ATR	e̙	Lowered	e̙ β̙		
□	Labiodental	t̬ d̬	~ Rhoticity	e̙	(β̙ = voiced bilabial approximant)			
					1 Syllabic	j̠	Non-syllabic	e̙

## DIACRITICS

a	Voiceless	n̥ d̚	, More rounded	ɔ	w	Labialised	tʷdʷ	~	Nasalised	ẽ
v	Voiced	s̺ t̺	, Less rounded	ɔ	j	Palatalised	tʲdʲ	ɱ	Nasal release	d <sup>n</sup>
h	Aspirated	tʰ dʰ	+ Advanced	ɨ	y	Velarised	tʲv dʲv	l	Lateral release	d <sup>l</sup>
..	Breathily-voiced	b̤ ä̤	- Retracted	i̯	f	Pharyngealised	tʰ f dʰ	ʔ	No audible release	dʔ
~	Greakly voiced	b̰ ä̰	.. Centralised	ë	~	Velarised or pharyngealised	f			
ˠ	Languo-labial	t̪ d̪	" Mild centralised	ē	ˠ	Raised	eˠ jˠ			
Dental		t̪ d̪	+ ATR	ɛ̌	(j = voiced alveolar fricative)					
Apostal		t̪ d̪	-ATR	ɛ̐	Lowered	e̞ β̞				
◻	Laminal	t̟ d̟	˘ Rhoticity	e˘	(β = voiced bilabial approximant)					
					1 Syllabic	j		~	Non-syllabic	e̞



## OTHER SYMBOLS

- by a ligature bar if necessary.

## SUPRASEGMENTALS

- firmly dressed  
foto'grafik

## TONES

- Linking (absence of a break)

- Rising innovation  
 Falling innovation

Colour tones may be symbolised by two or more tone symbols.

## Report on the 1989 Kiel Convention

From 18 to 21 August 1989 approximately 120 members of the Association (and a few guests) met in Kiel to work on revisions of the International Phonetic Alphabet (IPA). There had been a great deal of preparation for this convention, involving the soliciting of opinion by mail on a wide range of topics, and considerable research on the present status of the IPA. At the convention itself there were five major working groups which met almost continuously for the first two days. Three groups considered consonants, vowels and suprasegmentals; the other two considered computational aspects of the IPA, and the needs of speech pathologists and others for extensions of the IPA. In addition there were groups concerned with the principles on which the IPA should be based, the form of presentation of the IPA, past successes and failures, and methods of exemplification of the IPA. The groups reported back to the whole at intervals, and on the last day the convention met in a series of plenary sessions to consider and vote on the final working reports. The following is a compilation of the several reports reflecting the results of the discussions and votes of the plenary sessions. The Association is very grateful to the co-ordinators and co-chairs of the groups. Most of the wording below is taken directly from their reports.

### The Principles on which the IPA is based

The group concerned with this issue took the 1949 edition of *The Principles* as a basis and made a number of additions and deletions. The most important changes were the addition of a statement concerning the nature of the symbols in paragraph 2, and the deletion of a number of references to the phoneme which led to the revised statement in paragraph 5. Paragraph 7 is also new; it has been slightly edited from the form discussed in plenary session to include a statement originally part of the report of the vowels group. With this exception (and minor editorial changes), the statement below is as amended and approved in the plenary session.

1. The International Phonetic Association has a standard alphabet which is usually referred to by the initials IPA, or, in a number of non-English-speaking countries, API. It is designed primarily to meet practical linguistic needs, such as putting on record the phonetic or phonological structure of languages, providing learners of foreign languages with phonetic transcriptions to assist them in acquiring the pronunciation, and working out roman orthographies for languages written in other systems or for languages previously unwritten. A large number of symbols and diacritics is also provided for representing fine distinctions of sound quality, making the IPA well suited for use in all disciplines in which the representation of speech sounds is required.
2. The IPA is intended to be a set of symbols for representing all the possible sounds of the world's languages. The representation of these sounds uses a set of phonetic categories which describe how each sound is made and which determine a number of natural classes of sounds that operate in historical sound changes and phonological rules. The symbols of the IPA are shorthand ways of indicating certain intersections of these categories. Thus [p] is a shorthand way of designating the intersection of the categories voiceless, bilabial, and plosive; [m] is the intersection of the categories voiced, bilabial, and nasal; and so on. The sounds that are represented by the symbols are primarily those that serve to distinguish one word from another in a language.
3. In the construction of the IPA attention has been paid not only to the appropriateness of

each symbol from a phonetic point of view, but also to the suitability of symbols from the typographical point of view. The non-roman symbols of the IPA have, as far as possible, been made to harmonise with the roman letters. For instance, the Greek letters included in the IPA are roman adaptations; as the ordinary shape of the Greek letter  $\beta$  does not harmonise with roman type, in the IPA it has been given the form  $\beta$ . The Association does not favour the use of italic forms of symbols as models for the design of new symbols.

4. The construction and use of the IPA are guided by the following principles:

(a) When two sounds occurring in a given language are employed for distinguishing one word from another, they should whenever possible be represented by two distinct symbols without diacritics. Ordinary roman letters should be used as far as is practicable, but recourse must be had to other symbols when the roman alphabet is inadequate.

(b) When two sounds are very similar and are not known to be employed in any language for distinguishing meanings of utterances, they should, as a rule, be represented by the same symbol. Separate symbols or diacritics may, however, be used to distinguish such sounds when necessary.

(c) It is not possible to dispense entirely with diacritics. The International Phonetic Association recommends that their use be limited as far as possible to the following cases:

(i) For denoting length, stress and pitch.

(ii) For representing minute shades of sounds.

(iii) When the introduction of a single diacritic obviates the necessity for designing a number of new symbols (as, for instance, in the representation of nasalised vowels).

5. The use of symbols in representing the sounds of a particular language is usually guided by the principles of phonological contrast. All languages use a limited number of vowels and consonants that are able to distinguish word meanings: the contrast between English *m* and *n* is used to distinguish the word 'met' and 'net', and these two sounds therefore should be represented by different symbols. The three *k*-sounds of the English words 'keep, cart, cool' can be heard and felt to be different, but from the linguistic or phonological point of view the differences are not distinctive and all may be represented by the same [k] symbol. The same applies to the French *k*-sounds in 'qui, cas, cou', though these differ phonetically from the corresponding English ones.

6. The Association recommends that a phonetic transcription should be enclosed in square brackets [ ]. A transcription that notes only phonological contrasts may be enclosed in slanted lines or slashes / /.

7. A transcription always consists of a set of symbols and a set of conventions for their interpretation. Furthermore, the IPA consists of symbols and diacritics whose meaning cannot be learned entirely from written descriptions of the phonetic categories involved. The Association strongly recommends that anyone intending to use the symbols should receive training in order to learn how to produce and recognise the corresponding sounds with a reasonable degree of accuracy.

Note: It was strongly recommended that translations of these Principles should select appropriate examples in the language of the translation to illustrate the points made in paragraph 5.

## The form of presentation of the IPA

In a plenary session approval was voted for the publication of a revised edition of the *Principles of the IPA*, as well as a one page chart. These would not be copyrighted. Not voted on in the plenary sessions, but discussed in a number of the section meetings was the

idea that the new publication should be called *The IPA Handbook*. The actual Principles (as now) would be a part of this booklet. It would also contain explanations of the chart and illustrations of the use of the symbols in different languages, perhaps as described in a later section of this report. It would be available free to members, but it would be published by a regular publisher (perhaps one of the university presses) with royalties accruing to the IPA. Following tradition, it should be anonymous. It should be an attractive brochure that other organisations could obtain easily and adopt as a standard.

The plenary session also decided that there should be a single table for consonants, as has been previously done. The order of place of articulation and manner of articulation should be as specified in the report from the consonant group. Voiced and voiceless consonants at the same place of articulation should be indicated vertically, rather than horizontally (side by side) as previously done. Some kind of shading or light cross hatching should fill the blank spaces which represent "impossible" places of articulation. Each symbol should have only one value. The symbols inside the boxes should be much larger than the labels for the columns. (Editorial comment: after having tried to arrange the new chart in this way, it turned out to be very difficult to place voiceless consonants above voiced consonants at the same time as making the symbols larger. Accordingly the new chart has reverted to the traditional notion of having voiced consonants to the right of voiceless ones.)

Although not specifically voted on, the general feeling was that the vowel diagram would not be placed under the palatal and velar columns of the consonants. The vowel diagram would appear as proposed by the vowel group, with horizontal lines, a center line, and rounded and unrounded vowels on the same diagram.

Members were encouraged to translate the terminology used on the chart into other languages. They would also be welcome to make large size posters for pedagogical purposes.

## Consonants

1. The IPA chart should contain columns for the following places of articulation for consonants: Bilabial Labiodental Dental Alveolar Postalveolar Retroflex Palatal Velar Uvular Pharyngeal Glottal. (Note that this differs from the present chart by separating dental, alveolar and postalveolar and deleting the palato-alveolar, labial-velar and labial-palatal columns.) The dental and postalveolar columns will not be divided by a gridline from the alveolar one except where distinct symbols are approved. The dental diacritic may be used to distinguish dental sounds, and post-alveolar ones may be distinguished by use of the diacritic for retraction. The palato-alveolar fricative symbols will be displayed under the postalveolar column. The symbol [w] and its voiceless counterpart [ɰ] as well as the lone labial-palatal symbol [ɥ] will appear at the bottom of the chart together with Other symbols.

2. Only the following rows for manners of consonant articulation should be included in the main display of consonant symbols, in the order given: Plosive Nasal Trill Tap or Flap Fricative Lateral fricative Approximant Lateral approximant Ejective stop Implosive. (Note that this ordering reflects a progression from full occlusion to most open position for pulmonic consonants, with a subsidiary ordering principle that lateral follows nonlateral within a given class. The most common glottalic

consonants are then included.) Clicks are to be presented in a separate chart on the same page. (Editorial comment: it proved to be more economical of space simply to list them under Other symbols.) The word *median* should be omitted from the rows for (nonlateral) fricatives and approximants.

3. Gridlines on the consonant table should be retained.

4. The chart should contain explanatory notes on symbolizing affricates and doubly-articulated segments. The note on affricates should read as follows:

Affricates can be written by combining the symbol for a plosive and a homorganic fricative, such as [ts] or [kx]. In a language where this is ambiguous for a consonant sequence the two symbols should be joined by a ligature or tie-mark.

The note on doubly-articulated segments should read as follows:

[w] represents a voiced labial-velar approximant and [ɰ] its voiceless counterpart, [ɥ] represents a voiced labial-palatal approximant. Other segments with two simultaneous articulations should be written by combining the symbols for the two separate articulations, such as [kp, gb] or [mɲ]. In a language where this is ambiguous for a consonant sequence the two symbols should be joined by a ligature or tie-mark. (Editorial comment: it was not possible to include this note in full on the one page chart.)

5. Only one way of representing a given sound should be allowed on the chart.

6. A list of selected additional symbols and a set of diacritics should be included at the bottom of the chart (see below). The following recommendations for specific symbols and diacritics for consonants were approved.

Trills: [ʀ] should only be used for a voiced uvular trill. [ʙ] should be used for a voiced bilabial trill.

Tap or Flaps: where no independent symbol for a tap is provided, the breve diacritic should be used, e.g. [ã] or [ñ].

Fricatives: a new symbol for a voiced palatal fricative, [j], is recommended.

Lateral fricatives: the symbol for a voiced alveolar lateral fricative should be [ɬ], more clearly resembling a combination of [l] and [ʃ].

Approximants: [j] should only be used for a voiced palatal approximant.

Lateral approximants: [ɭ] should be used for a voiced velar lateral approximant.

Implosives: add [ɟ] for a voiced palatal implosive and [ɛ̰] for a voiced uvular implosive.

Add a series of new symbols for voiceless implosives, made by adding the implosive hook to the voiceless plosive symbols, i.e. [p̰ f̰ t̰ k̰ q̰].

Clicks: the primary place and manner categories for clicks should be represented by the symbols in use among Khoisan and other scholars concerned with languages using clicks, i.e. [ǀ] bilabial, [ǁ] dental, [ǃ] alveolar, [ǂ] post-alveolar or palatal, [ǁ] (alveolar) lateral: approval should be withdrawn from [ɿ ʑ ʒ].

Other symbols: Retain the current list except as noted below:

Add [ʔ] for voiced epiglottal plosive, [ħ] for voiceless epiglottal fricative, and [ʕ] for voiced epiglottal fricative.

The symbols for palatalised [ɟ] and [ʒ] (i.e. [ɟ̟] and [ʒ̟]), and for a voiced alveolar fricative trill [ɾ] should be deleted from the list of "other symbols". (These sounds can be represented with accepted diacritics).



The example of a modified symbol, namely "j<sup>s</sup> = Variety of j resembling s" should be deleted and reference to this method of modification should only appear in the general remarks on the use of symbols.

**Diacritics:** The following changes should be made to the list of diacritics:

Linguo-labial place of articulation should be represented with the diacritic [̱] subscripted to alveolar symbols. e.g. [ɲ] is a voiced linguo-labial nasal.

The diacritics [̤] and [̦] should be used to indicate apical and laminal articulations, respectively, e. g. [t̤] is a voiceless apical alveolar plosive; [d̦] is a voiced laminal alveolar plosive.

An example of a voiced aspirated plosive should be included in exemplifying the use of [ʱ], e.g. [dʱ].

The postposed diacritic [ʷ] should be used for all cases of labialisation. The postposed diacritic [ɥ] should be used for all cases of palatalisation. Approval should be withdrawn from the diacritics [̣] and [̤].

The postposed diacritic [̠] may be used for pharyngealisation. The postposed diacritic [̡] may be used for velarisation. The tilde through a symbol may be used as at present for either velarisation or pharyngealisation.

The "tiny T" diacritics for raising and lowering recommended by the vowel group should also be used with consonants to indicate similar modifications, e.g. the symbol for a voiced bilabial approximant should be [β̞]; the symbol for a voiced alveolar fricative should be [ɹ̞], and the symbol for a voiced uvular approximant should be [ʁ̞].

Fronting should be indicated by a subscript plus sign, [̥]. Retraction should be indicated by a subscript minus sign, [̦].

Creaky voice should be represented by a subscript tilde, [̰].

Plosives without audible release should be represented with the postposed diacritic [̚].

Nasal and lateral release should be indicated by postposed [̃] and [̣] respectively.

The "tie-mark" should not be listed among the diacritics as its use is exemplified in the notes on affricates and doubly articulated segments.

A number of proposals were rejected. It was decided that no recommendation should be made concerning superordinate (cover) terms for groups of places or manners of articulation, nor should there be separate rows for sibilant and nonsibilant fricatives, nor a separate column for the epiglottal (lower pharyngeal) place of articulation. There should be no recommendation for a set of gestural symbols (cover symbols for, e.g. all bilabial gestures, or all laryngeal gestures) at this time.

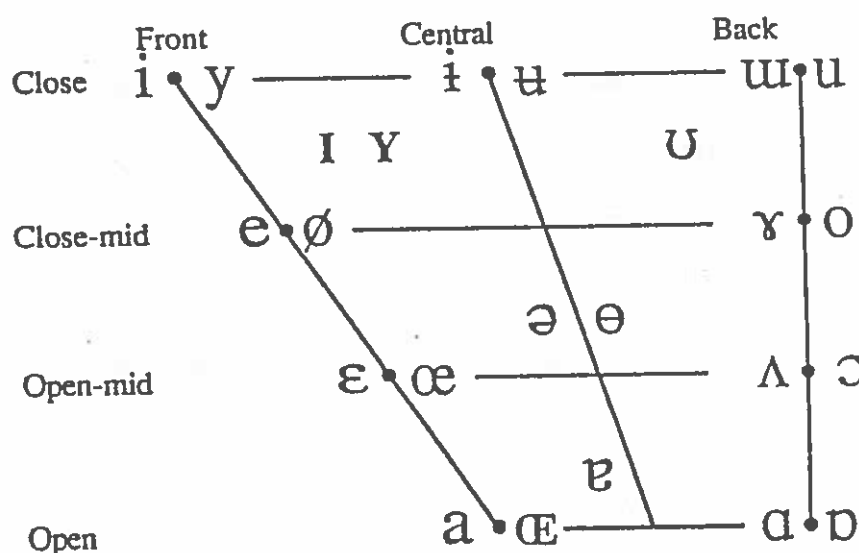
The following specific symbols were rejected: [w̥] for a voiced labial-velar fricative, [ɸ] for a voiceless velar lateral fricative, [ɣ̥] for a voiced velar lateral fricative, [ɤ̥] for a voiceless palatal lateral fricative, and [ʂ̥] and [ʐ̥] for the voiceless and voiced "hissing-hushing" fricatives of some Caucasian languages. It was also decided that no diacritics are needed for lenis/fortis, or for iteration; and no usage of subscript dot was recommended.

## Vowels

1. The basic principles of vowel description, including the use of the three dimensions of height, frontness, and rounding, and the representation of vowels in a quadrilateral space, should remain as at present.
2. In any statement of the Principles of the IPA it should be noted that "The relationship between vowels is described by plotting them on a quadrilateral, which represents an abstract, notional 'vowel space'. This vowel space has a correlation, though not an exact correspondence, with each of two aspects of the physical speech event of vowels: the position of the tongue; and the acoustic (and, relatedly, auditory) reflex of a vowel's production expressed as a plotting of its resonant frequencies". (Editorial comment: This statement will be incorporated not directly in the actual Principals, but in the new proposed *The IPA Handbook*.)
3. The main presentation of the vowels should consist of a single display with each rounded vowel paired immediately to the right of its unrounded counterpart.
4. Three principal named degrees of frontness, and four principal named degrees of height, should be recognised.
5. The three principal degrees of frontness should be labelled back, central, and front, and the four principal degrees of height should be labelled open, open-mid, close-mid, and close. (For open and close the equivalent terms low and high are recognized as being used by many phoneticians). The label mid should be given subsidiary status for vowels, half-way between open and close. Vowels half-way between close-mid and close may be referred to as near-close, and vowels half-way between open-mid and open may be referred to as near-open.
6. The vowel symbols should be presented on a right-angled quadrilateral divided by open-mid and close-mid lines parallel to top and bottom, and by a central line joining the midway point of the top and of the bottom.
7. The proportions of the quadrilateral should be such that its base is within 0.5 to 0.6 of the length of its top, and its back within 0.7 to 0.9 of the length of its top. A base:back:top ratio of 2:3:4 is often found to be the most convenient proportion to achieve this.
8. The symbol for Cardinal 15, baby gamma, should have its shape modified to make it more distinct from gamma. A letter like a "ram's horn" with a more looped shape and wider "arms" should be used, i.e. [ɾ].
9. Only [ɪ ʊ] should be approved, and not [ɪ ʊ̯].
10. Eighteen peripheral reference vowels should be symbolised. Their precise reference quality should be indicated, as on Figure 1, by a dot, but it is recognised that each would have a domain of application whose extent is determined by practical needs.
11. Seven further peripheral and non-peripheral vowel symbols should be recognised as shown on Figure 1, and their domain of application indicated by the placement of the

symbols.

12. Reversed epsilon [ɜ] should not be placed on the quadrilateral display, but a note should draw attention to the fact that it may be used as a symbol additional to schwa when, for phonological or other reasons, a second symbol for an unrounded vowel in the mid-central region is required.



13. To indicate modifications of a vowel on the height dimension the existing "tiny-T" diacritic should normally be used, thus [ɛ̆] for lowered and [ɛ̈] for raised. For modifications on the front-back dimension a subscript plus sign to indicate advanced (fronted) and a subscript minus sign for retracted (backed) should be used, thus [q̥] for advanced and [q̠] for retracted.

14. Centralisation should be understood to mean modification towards central on the front-back dimension, and may be indicated, as at present, by dieresis (umlaut).

15. Modification towards schwa should be termed mid-centralisation, and may be indicated by a superscript diacritic x (multiplication sign) above the vowel symbol, e.g. [ü̘].

16. Vowels with contrasts in tongue root advancement (or equivalently pharynx expansion) may be indicated by marking the Advanced Tongue Root vowels with the "tiny T" diacritic rotated 90 degrees clockwise to indicate advanced tongue root (+ATR) vowels, and/or by marking the retracted tongue root (-ATR) vowels with the same diacritic rotated 90 degrees anti-clockwise. Thus [q̥] for +ATR vowel and [q̠] for -ATR vowel.

17. Rhoticity in a vowel should be symbolised by a diacritic right hook placed on the right-hand side of the symbol, e.g. [ɛ̃ ɑ̃ ɔ̃ ɶ̃].

18. Left or right superscript [ˠ], [ˡ], and [ᵀ] should be given no special status other than that derived from general principles relating to superscript symbols, and thus should not be listed in any separate fashion.

19. An extra-short vowel may be indicated by a superscript breve, e.g. [ũ̥].

20. The definition and application of the existing over-rounding and under-rounding diacritics should be clarified so that it is clear that they can be used to cover any case where the expected lip position implied by the vowel symbol chosen is not as expected, e.g. a close back vowel with noticeable lip-spreading may be symbolised by [u] with the "under-rounding" diacritic added [u̹].

21. A non-syllabic vowel may be indicated by a subscript arc [u̥].

Several proposals concerning vowels were rejected. It was decided that:

1. No means of symbolising a central fully-open unrounded vowel with a special symbol should be provided. Specifically, small capital A [A] should not be recognised for this purpose. Print A [a], script A [ɑ], and ash [æ] should retain their present meaning.

2. No symbolisation for the dimension tense-lax should be recognised.

3. No symbolisation for sulcalisation of a vowel separate from that for rhoticity should be recognised.

4. No diacritic for a neutral lip position should be recognised.

5. No special symbol should be recognised for a vowel resulting from the phonological vocalisation of a lateral.

## Suprasegmentals

### Stress and Prominence Relations

It was re-affirmed that : ['] placed before the relevant syllable indicates primary stress in a given domain; [ˌ] indicates secondary stress in that domain; and the absence of any such symbol indicates lack of stress.

It was decided that [ː] may be used to indicate extra strong stress, with additional stress marks available for further degrees, e.g. [ːː]; but no approval was given to iterated [ː] marks, e.g. [ːːː], to indicate weaker (but non-zero) degrees of stress than the secondary stress. No symbolisation was recommended for specifically emphatic stress.

### Timing and Boundaries

Length: The following length marks were approved: [ː] long; [ˑ] half-long; [ˑ̃] extra-short; [ː̃] short. The length mark may be iterated for further degrees: [ːː], [ˑˑ], etc.

Length may also be indicated by iteration of segment symbols. Disambiguation of tauto- versus hetero-syllabicity of repeated segment symbols may be achieved by the insertion of the syllable boundary symbol (see below) between them.

## Boundaries

The following were approved: [.] syllable break, e.g. in [ji.ækʰt]; [ ] minor group, e.g. foot; [||] major group, e.g. intonation phrase. If necessary, the foot boundary mark should be thickened so as to be distinct from the newly adopted click symbols; but it was noted that opportunities for confusion will rarely arise. Slash was explicitly rejected on the grounds of being the well-established phonemic/phonological bracket.

Blank space should be available for the representation of boundaries of other types (e.g. traditional word boundaries) at the convenience of the user.

[x\_x] may be used as an explicit linking mark to represent the absence of a break or pause between segmental material that has been separated in order to show word boundaries.

## Pitch

It was decided to approve two pitch notation systems:





























(1) Diacritical tone marks (used e.g. by Africanists): these pitch marks are to be placed above the segmental material, to illustrate lexical tone or intonation or, in combination with the approved stress marks, to indicate word accents.

(2) "Tone letters" (following Chao 1930): these marks are to be placed before or after the segmental material.

Both systems are capable of representing five pitch levels, and are inter-translatable, as shown in Figure 2. Symbols in both systems may be extended analogously to describe still more complex patterns.

## Further pitch symbols

The following symbols may be placed before other pitch symbols, both for the phonologised phenomena found in tone languages and for stepped patterns in intonation systems: [↓] downstep; [↑] upstep. [↗] and [↘] may be attached to the major group boundary at the beginning of the phrase to refer to the global direction of pitch.

Pitch pattern					
high	extra high vs. high				
mid					
low	low vs. extra low				
rise					
fall					
high rise					
vs.					
low rise					
high fall					
vs.					
low fall					
rise fall					
fall rise					
rise fall rise					
etc.					

### Illustrations of the IPA

1. It was agreed that a tape of the new IPA chart, similar to that of the Wells-Ramsaran tape of the 1979 chart be made. A digital recording would be made as a master. John Wells agreed to undertake this task.
2. The IPA should be illustrated by transcriptions in a range of languages. For each

language there should be a word list, with English glosses, illustrating all the major surface phonetic contrasts that occur in the language, and a connected text. The story of the North Wind and the Sun may continue to be used for the text, because this means that space can be saved in that no translation of the passage is required.

3. Both the word list and the passage should also be given in orthography. There should also be conventions for the interpretation of the transcription (that is, statements of allophonic rules as well as statements of the phonetic realisation of the default allophone where this is not clear from the symbol involved). This transcription should be approximately as broad as the transcriptions of English in the current *Principles*. Lexically relevant suprasegmental properties (including in particular tone and unpredictable stress) should be indicated in the transcriptions. Other suprasegmental information should not normally be included. The use of word-spaces as in normal use is approved.

4. A recording of all this material should be available. The printed version should be a representation of what is actually recorded on the tape rather than an idealisation of what might have been uttered.

5. Examples of this type of illustration of the IPA will be provided for English (editorial comment: see below, for the draft of the first part of a possible *Illustrations* section) and a small number of other languages. Phoneticians will be invited to submit transcriptions of other languages (or varieties) to the *Journal*. Volunteers to work on the original small sample of languages should contact Peter Ladefoged, who will co-ordinate first efforts.

6. Several styles of transcription should be illustrated, and the point should be made that these are all valid IPA transcriptions.

7. It was decided that at this stage there was no need to include video recordings or any other technically more demanding instrumental recordings.

## Draft "Illustrations" section

This set of illustrations of the use of IPA symbols starts with a presentation of the sounds of English, and then continues with other languages in alphabetical order. There are two reasons for arranging this section in this way. Firstly, English is the language that is known by the largest number of potential users of the International Phonetic Alphabet. Secondly, there are already available a number of transcriptions of different regional varieties of English, made for different purposes. All of the following transcriptions are in accord with the principles of the IPA. It should be emphasized that the Association supports the use of a certain set of symbols, but does not hold that there is only one way to transcribe a given language.

## American English

The style of speech illustrated is that typical of many educated Americans in the Mid-Western and Far Western parts of the country. The actual speech on the accompanying recording is that of a 30 year old speaker who has lived most of his life in California. Four different forms of transcription of the vowels are given in the list of key words. In (1) the differences in quality are explicit, the other differences among vowels being

regarded as a matter of the conventions required for interpreting these particular symbols; in (2) the length differences are made explicit, the other aspects being regarded as a matter of interpretation conventions; in (3) both length and quality differences are shown; and in (4) diphthongs are treated as consisting of a nucleus and a consonantal offglide. If only a single style of transcription had been given it would have been necessary to have made all these aspects of vowel quality clear by means of additional conventions for interpreting the symbols, similar to those that now follow the list of symbols.

### Vowels

(1)	(2)	(3)	(4)		
i	i:	i:	ij	as in	'bead'
ɪ	ɪ	ɪ	ɪ		'bid'
e	e:	e:	ej		'bayed'
ɛ	ɛ	ɛ	ɛ		'bed'
æ	æ	æ	æ		'bad'
ɑ	ɑ	ɑ	ɑ		'pod'
o	o:	o:	ow		'bode'
ʊ	ʊ	ʊ	ʊə		'good'
u	u:	u:	uw		'booed'
ə	ə	ə	ə		'bud'
ə:	ə:	ə:	ə:		'bird'
aɪ	aɪ	aɪ	aj		'buy'
aʊ	aʊ	aʊ	aw		'bough'
ɔɪ	ɔɪ	ɔɪ	ɔj		'boy'

### Consonants

p	as in	'pie'	t	as in	'tie'	k	as in	'kite'	
b		'buy'	d		'die'	g		'guy'	
m		'my'	n		'nigh'	ŋ		'hang'	
f	'fie'	θ	'thigh'	s	'sigh'	ʃ	'shy'		
v	'vie'	ð	'thy'	z	'zoo'	ʒ	'azure'		
w	'why'	l	'lie'	ɹ	'rye'	j	'you'	h	'high'

### Stress

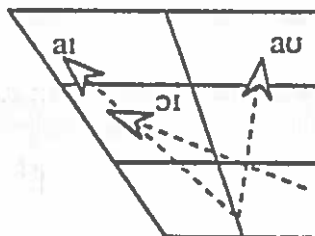
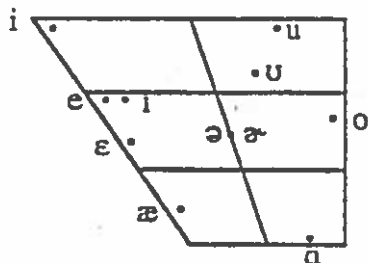
'	(primary stress)	as in	'photograph'	['fotogɹæf]
,	(secondary stress)	as in	'photographic'	[,fotogɹæfɪk]

### Conventions

[p,t,k] are aspirated in initial position, especially when stressed. [b,d,g] have a very short voice onset time, except when between voiced sounds. [t] is a voiced flap, resembling [ɾ], when between a stressed and an unstressed vowel. [d,n] are also flaps in similar circumstances. [l] is always velarized. The vowel symbols in column (1) have the qualities



shown in the following charts when pronounced in the key words. [e] and [o] are usually diphthongs, but they are monophthongs before [ɹ].



ðə 'noɪθ 'wind ənd ðə 'sən wə dis'pjutiŋ  
'wɪtʃ wəz ðə 'striŋgə, wen ə 'trævələ kem  
ə'laŋ 'ræpt in ə 'wɔɪm 'klok. ðe ə'grɪd ðət ðə  
'wən hu 'fæst sək'sɪdəd in 'mekɪŋ ðə 'trævələ  
'tek ɪz 'klok ,af ʃʊd bi kən'sɪdəd 'striŋgə ðən  
ðə 'æðə. ðen ðə 'noɪθ 'wind 'blu əz 'haɪd əz  
ɪ 'kʊd, bət ðə 'mɔɪ ɪ 'blu ðə 'mɔɪ 'klosli dɪd  
ðə 'trævələ 'fold ɪz 'klok ə'raʊnd ɪm; ənd ət  
'læst ðə 'noɪθ 'wind 'gev 'əp ðə ə'tempt. 'ðen  
ðə 'sən 'ʃon 'aʊt 'waɪmli, ənd ɪ'mɪdiətli ðə  
'trævələ 'tʊk ,af hɪz 'klok. ənd 'so ðə 'noɪθ  
'wind wəz ə'blaɪdʒd tə kən'fes ðət ðə 'sən  
wəz ðə 'striŋgə əv ðə 'tu.

## Past Successes and Failures of the IPA: Report 20 August 1989 (UPDATE)

1. Our brief has been essentially to identify which aspects of IPA have been accepted in disciplines which use phonetics. Seven members of the group have provided information, and this report is based on their conclusions. We would welcome further contributions, though, from colleagues generally since the task we have set ourselves has been a very wide one. In certain cases, we are simply not in a position to report on the use of IPA in some subject areas.

2. Twenty subject areas have been set up for investigation (see JIPA/Ladefoged 49 & 57). Of these we feel able to report fairly confidently about Dialectology, Dictionaries, Medicine/Dentistry/Speech Pathology and Singing.

3. Dialectology In the German-speaking countries, IPA is used in PHONAI (Lautbibliothek der europäischen Sprachen und Mundarten (1967), and Der Deutsche Sprachatlas based in Marburg. However, Teuthonista is used by the project Sprache in Südwestdeutschland in Tübingen. For Rhenish dialects, the Rheinische Dokumenta system is still in use. The Sprachatlas der deutschen Schweiz (SDS) does not use IPA. A software program to convert Teuthonista into IPA is now available.

In the UK, the Survey of English Dialects and the Linguistic Survey of Scotland have used IPA (with some slight modifications).

In France, the ALF1 and ALF2 systems of Rousselot/Grammont/Dauzat are still used.

In Norway, Storm's Norvegia has for years been the main system, but a change is afoot - see Sandøy 1987.

In North American dialect surveys, IPA is now the major system in use.

4. Dictionaries A random sample of monolingual and bilingual dictionaries has shown that IPA is in use in many major dictionaries - sometimes with some smallish modifications. For example the New English Dictionary (NOED, 1989) is now in IPA, as are Grand Larousse and the Robert dictionaries. The Collins series of dictionaries use IPA as a matter of policy. The Chambers ones, however, still use respelling, though a switchover to IPA is emerging.

Examples of where dictionary usage is sometimes out of line with IPA are:

Terminology: interdental, occlusive, semiconsonant, sibilant, unvoiced and vibrant.

Symbology: 1. all symbols italicized 2. stress marked by either a capital version of the symbol for the vowel, or a subscript <sub>ˈ</sub> or an acute accent <sup>ˈ</sup> before the syllable, or after it, or a <sub>ˈ</sub> or <sup>ˈ</sup>. 3. glottal stop marked by | or an elongated version of ʔ 4. rhoticity (in English) is indicated either by ɹ or by r. 5. linking /r/ in English is marked in various ways: \*, small superscript r, r, or (r). We have noticed various other divergences as the use of ɔ̃ to indicate no liaison (in French) and ŋ instead of ŋ. In addition, it is clear that some publishers simply do not have the right typeface for some symbols - hence the use of Greek alpha etc.

5. Medicine/Dentistry/Speech Pathology Apart from Speech Pathology, little use is made of IPA, and even in Speech Pathology (particularly in countries where the IPA extension to the IPA is not in use) it may be restricted to quoting an occasional

## Workgroup 9: Computer Coding of IPA Symbols and Computer Representation of Individual Languages.

The IPA must define and communicate its officially accepted symbols to other organizations and professionals, including publishers, dictionary makers, computer-systems specialists and programmers.

Each accepted symbol or diacritic is assigned a unique numerical equivalent, independent of computer-coding conventions, and a unique name which provides a mnemonic description of the character shape. Symbols that have been used in earlier versions of the IPA, but deleted in later revisions, should retain a number, and name, for reference purposes.

The numerical equivalent (IPA Number) is to be regarded as a communication-interchange standard, to serve as a basis for creating computer-code translation tables from various phonetic-character-set software to the common IPA Number.

This IPA Number is not implemented directly in computer format (for example, ASCII), but is expressed as a simple numerical directory of digit triples which serves as a unique reference. The IPA Number can also serve as a typesetters' guide to the Phonetic Symbol Chart.

The systematic numerical listing represents the IPA symbols as presented in the Charts. Therefore, the first digit of the triple indicates the symbol category; 1nn for consonants, 2nn for vowels, 3nn for segmental diacritics, 4nn for suprasegmental symbols, 5nn for voice quality diacritics, 6nn-8nn reserved for future specification. The digit triple 9nn has the function of an escape sequence into procedure definable for special applications. The listing cross-references each IPA symbol and diacritic with its IPA Number (digit triple), and its unique name.

Translation tables can be developed to reference ASCII or other coding assignments of commonly used and accepted systems to IPA Numbers. The coding assignments of these systems will continue to be collected and compared for dissemination through publication in the Journal and from the Association.

Computer representations of individual languages should employ the official IPA symbols. This guarantees the interchange of phonetic descriptions between institutions by means of the IPA Numbers.

Symbols for the annotation of speech databases are to be selected according to agreed decisions on the phonemic (or even orthographical) representation for the given language.

If extensive speech databases are given phonetic specifications, it is recommended to have at least two levels of transcriptions: a systematic (or broad) transcription identifying the spoken words within each utterance, and a detailed (or narrow) transcription specifying the actual phonetic realization.

Thus the given relationships between different levels of transcription on the one hand, as well as the relationship between the acoustic signal and these phonetic categories on the other, serve different purposes. For the advancement of speech technology, it is a practical requirement. At the same time, it provides speech data in a form which allows the development and extension of phonetic knowledge, particularly if further, multiply transduced, physiological data are included in speech databases.

symbol. However, divergences from IPA conventions in terminology are noticeable: lingua-dental, occluded stop consonant, sonorant, etc. One publication distinguishes (in an unspecified way) between voiceless, devoiced and unvoiced.

6. Singing There is a tradition of emphasizing physiological phonetics in much of the literature - this goes back via Panconcelli-Calzia and Hermann Gutzmann to 19th century work. However, many works on singing are aware of IPA. A major one is Ralph Appelman's The Science of Vocal Pedagogy (1967/1974), which includes sections on, for example, the Cardinal Vowels, X-ray studies of tongue positions and differences between UK and USA accents of English. Many professional singers testify (in print) to the usefulness of a knowledge of IPA. Phonetic transcriptions are usually few, and sometimes the accompanying descriptions reveal divergences from IPA: mute consonants versus voiced ones; light and heavy consonants instead of voiceless and voiced. A hangover from an earlier chart is the use of the ~ to indicate a trill (eg r).

7. Other conclusions In Norway and the USA, speech technologists use IPA. In France there is a decreasing use of IPA in language teaching. In the USA, IPA is not generally accepted by some teachers of foreign languages, including ESL. Further research seems necessary to establish the precise status of IPA in the field of language teaching.

8. IPA or IPAA? There was near unanimity in not introducing the abbreviation IPAA.

9. Alles ist schon gedacht worden... Up until about 1912, the representation of vowels on the chart was more auditorily than articulatorily based. In 1907 an attempt was made to introduce a symbol for an open central vowel. Since the 1880s, there has been a demand to keep the alphabet simple and to remember the users. In 1903, the question of a separate symbol for a palatal fricative versus a palatal approximant was first mooted...

MKCM  
20/08/89

# Report of the Working Group on Extensions of the IPA for Deviant and Pathological Speech

IPA Kiel Convention, 21.08.90

## 1. General Considerations

1.1 Throughout its deliberations, this working group has followed the general principle that, to the extent possible, there should be no conflict between the IPA and whatever extensions we consider; i.e., the so-called "central core" of the IPA should be used as a starting point for these extensions. We have monitored the work of other groups at this meeting to insure that such conflicts did not arise.

1.2 Extensions of the IPA which we considered were limited to vocal communicative acts; i.e., although we remain sensitive to the wide variety of potential users of the IPA many of whom (e.g., ethnographers) deal with non-vocal and/or non-communicative behaviors, we ourselves did not treat such extensions explicitly here.

## 2. Specific Proposals

### 2.1 Voice Quality

2.1.1 **Suprasegmental voice quality** -- Longer term phonatory and articulatory features which serve to characterize the speaker can be abstracted from segmental transcription by means of labeled brackets. Example: {V...segmental transcription.V} for an utterance produced with breathy voice on all susceptible segments. The following voice qualities, and their notations, are proposed:

phonatory features:

V = whispery voice/ breathy voice

V = whisper

$\underset{\sim}{V}$  = creaky voice/<sup>creak</sup>~~weak~~ voice  
 $V!!$  = ventricular voice / <sup>harsh</sup> voice  
 $F$  = falsetto voice

articulatory features:

$V^w$  = labialized  
 $V^v$  = labiodentalized  
 $\underset{\sim}{V}$  = dentalized  
 $V^j$  = palatalized  
 $V^r$  = velarized  
 $V^e$  = pharyng(e)alized  
 $V_l$  = retroflex  
 $\tilde{V}$  = nasalized  
 $\tilde{\tilde{V}}$  = denasalized

Comment: We support two mechanisms for representing features extending across more than one segment, namely labeled braces (shown above) and multiple tiers. The labeled curly braces are consistent with the notation proposed by the prosodics working group. In addition, we wish to permit a multiple tier mechanism (not shown here) for those coding situations in which several suprasegmental dimensions interact in complex ways. The locations of some of these diacritics will be adjusted to agree with proposals accepted for consonant and vowel segments.

2.1.2 **Segmental voice quality** -- The same diacritics used for suprasegmental voice quality may be used for the appropriate features of individual segments. Example:  $\underset{\sim}{X}$  for a segment produced with breathy voice.

2.2 Relating mainly to place of articulation

2.2.1 The diacritic  $\underset{\sim}{\sim}$  ("seagull") will be used to denote **linguallabial** articulation. Examples:  $\underset{\sim}{p}$   $\underset{\sim}{v}$   $\underset{\sim}{l}$

2.2.2 The symbols  $\underset{\sim}{p}$   $\underset{\sim}{b}$   $\underset{\sim}{m}$  will be used to denote the **labiodental** plosives and nasal, in which the lower lip approximates the upper

teeth. In those cases in which reverse labiodental articulation must be distinguished (i.e., upper lip against lower teeth, for which we propose the name dentolabial),  $\tilde{p}$   $\tilde{b}$   $\tilde{m}$  will be used.

Comment: The diacritic  $\sqcup$  cannot be used to denote the upper teeth, at least in lower position, since it has been proposed for apicality.

2.2.3 The (double) diacritic  $\sqcap$  will be used to denote interdental or bidental articulation. Interdental refers to articulations in which the tongue tip or blade is placed between the teeth (examples:  $\tilde{t}$   $\tilde{d}$   $\tilde{n}$ ); bidental refers to articulations in which the teeth themselves are approximated (examples:  $\tilde{h}$   $\tilde{v}$   $\tilde{r}$  [percussive]).

2.2.4 The diacritic  $\leftrightarrow$  will denote labial spreading. Example:  $\tilde{f}$

### 2.3 Relating mainly to manner of articulation --

2.3.1 The diacritic  $\propto$  will denote denasal articulation. Example:  $\tilde{m}$

2.3.2 The diacritic  $\sim$  will denote nasal escape (due to velopharyngeal port [VPP] incompetence). Examples:  $\tilde{p}$   $\tilde{s}$

Comment: This situation arises when an oral obstruent is intended but, because of VPP incompetence, audible nasal air flow results. Note that the diacritic for normal nasality ( $\sim$ ) refers to the presence of nasal resonance, not flow. Compare also the nareal fricatives, immediately below.

2.3.3 The symbols  $\underline{hm}$   $\underline{hn}$  etc. will denote nareal fricatives.

Comment: These segments arise (for example) when nasal consonants are intended but, (presumably) because of VPP incompetence, audible friction arises in the nares.

2.3.4.1 The symbol  $f_{\eta}$  will denote the velopharyngeal fricative.

2.3.4.2 The diacritic  $\approx$  will denote velopharyngeal frication accompanying another segment. Example:  $\tilde{p}$

Comment: This symbol and diacritic refer to the so-called "nasal snort," in which (usually loud) frication results from leakage through a tense, but incompletely occluded, VPP. The source of the acoustic signal is thus the VPP, itself, rather than the nares.

2.3.5 The diacritics  $\text{„}$  and  $\neg$  will denote **stronger** and **weaker** articulation, respectively. Examples:  $f_{\text{„}}$   $m_{\neg}$

Comment: These terms refer to physiological, not phonological, force of articulation.

2.3.6 The notation  $X\backslash X$  will denote **reiterated** articulation, as in stuttering. Example:  $p\backslash p$

Comment: The notation  $\widehat{XXX}$  was rejected in favor of  $X\backslash X$ , because  $\widehat{bbb}$  could be confused with  $\widehat{bb}$ , which had been proposed as the voiced bilabial trill. With the adoption of  $\text{B}$  as the voiced bilabial trill, however, this constraint has been removed.

2.3.7 The symbols  $\text{ɬ}$  and  $\text{ɮ}$  will denote **lateralized** s and z, resp.

Comment: We have decided not to propose a diacritic for **lateralization**, as we are not convinced of its necessity.

2.3.8 The diacritic  $\text{ʌ}$  will denote **whistled** articulation. Example:  $s^{\text{ʌ}}$

## 2.4 Relating mainly to vocal fold activity

2.4.1 The notation  $\text{v}_X$  and  $X_{\text{v}}$  will denote **pre-** and **post-voicing** of segments, respectively (i.e., voicing which starts earlier and/or continues later than the norm for the segment in question).  
Examples:  $\text{v}_b$   $z_{\text{v}}$



2.4.2.1 The notation  $\overset{X}{\underset{(o)}{z}}$  will denote partial devoicing of a normally voiced segment. Example:  $\underset{(o)}{z}$

2.4.2.2 The notations  $\overset{X}{\underset{(o)}{a}}$  and  $\overset{X}{\underset{(o)}{m}}$  denote initial and final partial devoicing, respectively. Examples:  $\underset{(o)}{a}$   $\underset{(o)}{m}$

2.4.3.1 The notation  $\overset{X}{\underset{(v)}{f}}$  will denote partial voicing of a normally unvoiced segment. Example:  $\underset{(v)}{f}$

2.4.3.2 The notations  $\overset{X}{\underset{(v)}{h}}$  and  $\overset{X}{\underset{(v)}{s}}$  denote initial and final partial voicing, respectively. Examples:  $\underset{(v)}{h}$   $\underset{(v)}{s}$

2.4.4 The notation  $^hX$  will denote preaspiration.

## 2.5 Relating mainly to air-stream mechanism

2.5.1.1 The notation  $X\downarrow$  will denote ingressive air-flow for a segment which is normally egressive. Example:  $p\downarrow$

2.5.1.2 The notation  $X\uparrow$  will denote egressive air-flow for a segment which is normally ingressive. Example:  $! \uparrow$

## 2.6 Other articulations

2.6.1 The notation  $(X)$  will denote silent articulation ("mouthing"). Example:  $(\int)$ , produced with upwards-pointing index finger touching the lips at midline, to indicate "shushing."

2.7 Relating to degrees of indeterminacy -- Intended for those cases where, for reasons of severe distortion due to pathological condition, the articulatory mechanism for the utterance is not completely specifiable.

- 2.7.1 The notation  $\square$  is used when a segment has been perceived, but no features of that segment can be obtained with certainty. The cursive form is  $\bigcirc$  (balloon).

Comment: An alternative notation is  $\textcircled{V}$ , i.e., the segment could be either a consonant or a vowel.

- 2.7.2 The notations  $\textcircled{C}$  and  $\textcircled{V}$  is used when the segment is perceived to be a contoid or a vocoid, respectively, but no additional features can be discerned with certainty.

- 2.7.3 The notation  $\textcircled{F}$ , where F is an (unambiguous) abbreviation for some feature, is used when only that one feature of the otherwise undistinguishable segment is identified. Examples:  $\textcircled{S}$  for an unspecified stop;  $\textcircled{\text{Pal}}$  for an unspecified palatal.

- 2.7.4 The notation  $\textcircled{F.F...}$  is used where more than one feature of the otherwise undistinguishable segment can be identified. The commas may be omitted provided no ambiguity results. Example:  $\textcircled{\text{F.Bil}}$  for an otherwise unspecified bilabial fricative.

- 2.7.5 The notation  $\textcircled{X}$ , where X is an IPA symbol, is used when the segment sounds like an X, but the transcriber is not quite sure. Example:  $\textcircled{t}$

- 2.7.6 The notation  $((X...))$  is used for sounds obscured by extraneous (environmental) noise. Example:  $\text{big}((b))\text{ædw}\text{v}\text{f}$

- 2.7.7 The asterisk (\*) should be used to make reference to segments or features for which no symbol is provided. Example:  $\text{hi go}^{\text{v}}(\text{Q})^*$ , and the comment " \* = raspberry" appears elsewhere.

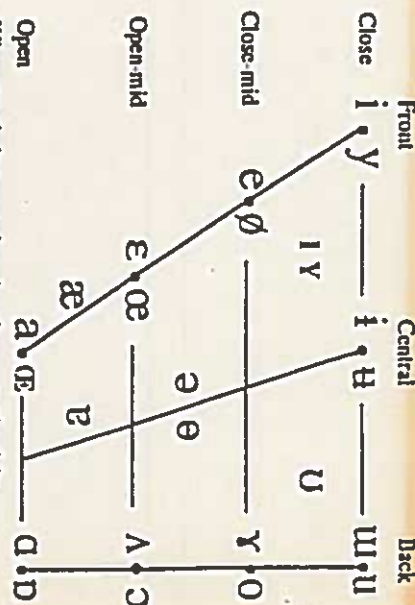
	Labial	Labiodental	Dental	Alveolar	Postalveolar	Retrolflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			ɾ					ʀ		
Tap or Flap				ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			
Ejective stop	p' b'			t' d'		t'ɬ' d'ɮ'	c' ɟ'	k' ɡ'	q' ɢ'		
Implosive	ɓ ɗ			ɗ			c' ɟ'	k' ɡ'	q' ɢ'		

\*When symbols appear in pairs, the one to the left represents a voiceless consonant.

## DIACRITICS

Voiceless	̥ ̦	More rounded	̤ ̧	Labialized	tʷ dʷ	Nasalized	ẽ
Voiced	̬ ̭	Less rounded	̦ ̧	Palatalized	tʃ dʃ	Nasal release	d̪
Aspirated	tʰ dʰ	Advanced	̟ ̠	Velarized	tˠ dˠ	Lateral release	dˡ
Breathily voiced	̤ ̥	Retracted	̠ ̡	Pharyngealized	tˤ dˤ	No audible release	d̚
Creaky voiced	̰ ̱	Centralized	̠ ̡	Velarized or pharyngealized	̠ ̡		
Lingual labial	ɮ ɢ	Mid-centralized	̠ ̡				
Dental	̪ ̫	+ATR	̠ ̡	Raised	ɛ̝ ɟ̝		
Apical	̤ ̥	-ATR	̠ ̡	Lowered	ɛ̞ ɟ̞		
	̤ ̥	Rhoticity	̠ ̡	(ɟ̞ = voiced bilabial approximant)			
				Syllabic	ɹ̥ ɹ̥	Non-syllabic	ɹ̥

## VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

## OTHER SYMBOLS

- ⱱ Voiceless labial-velar fricative
- Ⱶ Voiced labial-velar approximant
- ɕ Voiced labial-palatal approximant
- ɺ Voiceless epiglottal fricative
- ʕ Voiced epiglottal plosive
- ʕ Voiced epiglottal fricative
- ʕ Simultaneous ʃ and ʕ
- ʕ Additional mid central vowel
- Ɱ Bilabial click
- Ɱ Dental click
- Ɱ (Post-)alveolar click
- Ɱ Palatoalveolar click
- Ɱ Alveolar lateral click
- Ɱ Alveolar lateral flap
- Ɱ Alveopalatal fricatives

Affricates and double articulations can be represented by two symbols joined by a ligaturelike bar if necessary.

kp ts

## SUPRASEGMENTALS

- ˈ Primary stress
- ˌ Secondary stress

ˈekspləˈneɪʃən

- ˈ Long
- ˌ Half-long

ˈeɪ

- ˈ Extra-short

ˈɛ

- ˈ Syllable break

ˈjɪ.ækt

- ˈ Minor (foot) group

ˈ

- ˈ Major (intonation) group

ˈ

- ˈ Linking (absence of a break)

- ˈ Global rise

- ˈ Global fall

## LEVEL TONES

- ˈ Extra high
- ˌ High
- ˌ Mid
- ˌ Low
- ˌ Extra-low

## CONTOUR TONES

- ˈ or ˌ rise
- ˌ fall
- ˌ high rise
- ˌ low rise
- ˌ rise fall
- etc.





burst out: "What's the point of all this? People should know by now! There are no human rights in Afghanistan. They burn people easier than wood!"

## Massacres

Massacres in which large numbers of villagers, including women and children, have been brutally killed have been reported since the Afghan conflict began. Such killings are invariably the work of Soviet soldiers, sometimes accompanied by a few Afghan party members who serve as guides. The massacres documented in this section are only a few examples of the devastating events that have become almost commonplace in Afghanistan.

### Massacre at Darra-e Nur

In March 1986 a massacre took place at Darra-e Nur in Konarha Province, some twenty-five kilometers north of the city of Jalalabad. The massacre was documented by the Afghan Information Centre in its *Monthly Bulletin*, number 61 (April 1986); in reports prepared by Abdul Karim Muheeb, a former official of the Afghan Ministry of Justice; and in testimonies by refugees whom we interviewed in Yakhagundh refugee camp outside Peshawar in September 1986.

Darra-e Nur is a large and once densely populated valley that had been under the control of the mujahedin for most of the war. On 9 March 1986 Russian artillery began an attack on the villages of Barkot, Duderak, Kasht, and Qalat Janshegar, and Waigal. According to the Afghan Information Centre, the mujahedin fought back and killed about twenty-eight Russians.

Thirty villagers were also killed. To avenge the death of one of their high-ranking officers in the operation, the Russians launched an attack on Solan and Char Qala villages on March 13. They killed four villagers and injured two.

A new Russian attack on the areas of Bamba Kot, Sheram Qala and Omar Qala was carried out on March 19. There was no resistance by the people; the Russians shot dead 40 children, women and old people inside the houses.

On the same date, brutal operations were carried out in the areas of Solan Kati and Malgandol. The Russians occupied the heights in the night and started massacring the people at 6:00 A.M. without facing any resistance. Civilians, including infants, children, women and the aged, were killed and more than 200 houses burned. The bodies of 80 civilians were recovered from the debris while many bodies are still lying under the rubble.

The Afghan Information Centre lists the names of more than sixty victims of the massacres.

Abdul Karim Muheeb interviewed Toyalal Rokyani, who provided the following report and the names of many of the victims.

"When the resistance did not stop and people in the territory were still carrying on operations against enemy positions, the brutal forces of the enemy entrenched against the villages of Bambakool, Sheram Qala and Uwnar Qala and ruined one hundred and fifty houses out of which about seventy were set on fire and the rest were demolished by shelling.

"They carried on the shelling of those houses indiscriminately and set fire to the grand mosque of Bamba Kool. In this shelling forty-three persons, including aged men, women and children, were martyred.

"On March 25th 1986 in the late hours of the night the enemy forces surrounded the villages of Sufhan, Mulgandool and Qulhran and stormed the houses in the early dawn. They entered Sufhan at five thirty A.M. On storming the village they initially set fire to the grand village mosque where thirteen persons were burned to death while performing their morning prayers.

"Then they started house-to-house looting, killing occupants as they wanted. In this massacre they killed a man who testified that he was a hundred and fifty years old. His name was Haikal Khan. Another aged victim was Mo'enuddin, aged seventy years. A one and half year old granddaughter of Mo'enuddin was also martyred when he was still swimming in his blood. An eye witness reporter asserts that more than one hundred persons were martyred on this day in those three villages.

"During these massacres an old lady whose name was Bakhlawara and her twelve-year-old granddaughter, both of them blind, were martyred by bayonets.

"The most tragic moment of the massacre occurred when the invaders were bayoneting to death a handsome youth of only fifteen years whose name was Malang. Seeing what the criminals intended against her son, his mother stretched herself over him but the savages martyred both of them with Kalashnikov fire. While the mother and son were still breathing, the Russian brats sprinkled kerosene over them and set them on fire."

In September 1986 we interviewed Nur Beg, a village elder from the Darra-e Nur valley, now a refugee in Yakhagundh camp. He described how the same villages, Sheram Qala, Omar Qala, Bamba Kot, and Solan, were destroyed by Soviet troops in March 1986:

"Darra-e Nur is a mountain pass. The Russians had dropped paratroopers in the mountains in the middle of the night, on both sides of





the valley. They entered the village by foot. The mountains were full of paratroopers. The people didn't know because they came at night, silently. In the morning planes also came, jets and helicopters. Guns began firing at the villages. The villages were unprotected. The mujahedin were far away. It was only Russians that came, with a few Parchami guides. About 180 people were killed altogether in the four villages. I have a list of the victims.

"The people ran to the mountains where the mujahedin were. The villages were completely destroyed. Most of the bodies were under the debris. It took six days to dig them out. The burning continued for forty days from napalm bombs with delayed action.

"All the survivors left for Pakistan. It took fifteen days to get here. There were Russian planes overhead but they didn't bomb us. There were mujahedin everywhere. And land mines set by hand around the area."

We met two young women from Omar Qala; the widows of Sayed Jamal, who was killed in the massacre. In addition to his two wives, Sayed Jamal left five sons and two daughters. The senior wife described the massacre:

"In the night they occupied the mountains near the village. At dawn they came down and entered the village. They entered the houses. Some people escaped, some were in the mosque. Our husband was inside the house. He was taken out by them. His hands were tied behind his back. They took him to the dry river bed and shot him. He was alone. We heard that the other men were lined up and machine-gunned. The village was full of people and many did not escape. I didn't see any Afghans there, only Russians.

"After our husband was buried, we left with the children for Pakistan. The people all started moving. We joined the caravan on foot; the children were on donkeys.

"Our husband was a very nice man. He loved both of our children. He did not say bad things to anyone. He was always at home, playing with the children... a good father who had much affection for his children."

Dindar, a farmer from Omar Qala, lost three daughters during the March attack.

"Our house was outside the main village. The Russians came in the night and were hiding. We were in the house, in the early morning, in the dawn. There was firing and we couldn't go out. My daughters were killed by mortar that came into the house. My wife survived. My house was destroyed. The village was half-destroyed. We came here to escape the Russians."

Dindar's daughters killed in the attack were Zaw Jan (twelve years old), Basri Jan (eight years old), and Marjanbame (six years old).

Ghaffar Khan, about twelve years old, told us about the attack on Sotan village. When the attack began, he started running with his father and grandfather. As they ran, they were ambushed. His father was killed. "Many others were killed also."

### Massacre in Kunduz Province

We received three detailed, independent reports of a large massacre in Kunduz Province in December 1984 or January 1985: from Dr. Juliette Fournot of MSF, who met the survivors in Paklia Province as she was returning from a medical mission inside Afghanistan and they were on the way to Pakistan; from Abdul Karim Muheb of Peshawar University, who had interviewed a witness; and from the survivors themselves, interviewed in a Pakistani refugee camp. The three accounts differ somewhat on the exact dates of the events. The following account is based primarily on direct testimony from survivors.

On 14 December 1984 Soviet forces entered the Issa Khel area of Chardara District, Kunduz, and began searches in several villages. The Soviets looted houses, destroyed foodstuffs, burned cotton crops, raped women, and killed a number of villagers.

"They also threw on this day three hand grenades into the house of my uncle whose name was Janan. My uncle was sitting by the stove in his dining room when the first hand grenade was thrown. As a result my uncle was martyred and the other members of the family sustained injuries of different dimensions, most of them very serious.... The first grenade was followed by two more, which ruined almost all of the house. It was not only the fate of my uncle's house but of many houses and families in that village." (Testimony of Mohammad Jan, son of Lal Jan, provided by Abdul Karim Muheb)

Resistance fighters in the area reacted by ambushing the Soviet column on its way back to its base in Kunduz city, inflicting some light damage. On Sunday, 22 December, apparently in reprisal, Soviet troops accompanied by a few PDPA members encircled the nearby village of Haji Rahmatullah at 10:00 or 11:00 A.M.<sup>7</sup>

They entered systematically in all the houses, executing all the inhabitants, including women and children, often by shooting them in the head. Three pregnant women were eviscerated [with bayonets]. Fire was set to the houses, and the flames continued to burn for 5 days. The troops also took with them all items of value and money, which the people offered them hoping to be spared, without managing to save a single life

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